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ABSTRACT

This course provides students with the general information, technical knowledge, basic skills, attitudes, and values required for job entry level as an auto body repair helper. Course content includes goals, specific objectives, orientation, filling with body solder, and plastic filler. A post-test sample is appended. (NH)

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AUTHORIZED COURSE OF INSTRUCTION FOR THE QUINMESTER PROGRAM

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Course Outline
AUTO BODY REPAIR AND REFINISHING 2
(Automotive Body Fillers)
Department 48 - Course 9035.03

CE 002 387

DADE COUNTY PUBLIC SCHOOLS
DIVISION OF INSTRUCTION • 1973

DADE COUNTY PUBLIC SCHOOLS

1450 NORTHEAST SECOND AVENUE

MIAMI, FLORIDA 33132

Course Outline

AUTO BODY REPAIR AND REFINISHING 2
(Automotive Body Fillers)

Department 48 - Course 9035.03

county office of

VOCATIONAL AND ADULT EDUCATION

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Miami, Florida 33132

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Published by the School Board of Dade County

Course Description

9033	48	9035.03	AUTOMOTIVE BODY FILLERS
State Category Number	County Dept. Number	County Course Number	Course Title

This quinmester course is designed as one of a group of quinmester courses offered in the field of auto body repair and refinishing. The student will receive the general information, technical knowledge, basic skills, attitudes and values that are required for job entry level as an auto body repair helper. The student will receive the general information for mixing plastic material and its use, also preparation of metal and use of body solder as a filler. This course will be given in a 9-week period.

Indicators of success: The applicant must demonstrate an eighth grade equivalency score in reading and math and also have average ability in mechanical aptitudes.

Clock hours: 135

PREFACE

The following foundation quinmester course outline is a guide to help students become employable with skills, knowledge, attitudes and values necessary for performing the required service of the auto body repairman.

This outline consists of 4 blocks of instruction which are subdivided into several units each. It is only one part of a series of quinmester outlines designed for the complete auto body repairman. This course is 135 hours in length.

Prerequisites for this course are as follows: The student should have an eighth grade equivalency score in reading comprehension, arithmetic fundamentals and mechanical aptitudes. The student must be physically and mentally able to profit from this training.

Prior to entry into this course, the vocational student will display mastery of the skills indicated in Body Shell Alignment (9035.02).

Instructions will consist of demonstrations, lectures, group discussions, audio visual aids and resource people from industry. Instructions will be flexible to meet individual needs and abilities.

The bibliography appearing on the last page of this outline lists several basic references, also supplementary references and audio visual aids.

This outline was developed through the cooperative efforts of the instructional and supervisory personnel, the Quinmester Advisory Committee, and the Vocational Curriculum Materials Service and has been approved by the Dade County Vocational Curriculum Committee.

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with Suggested Hourly Breakdown

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GOALS

The Auto Body Repair trainee must be able to demonstrate:

1. The ability to describe the composition of body solder.
2. The ability to prepare metal surface preparatory to the application of body solder.
3. Skills and knowledge to apply body solder.
4. The ability to metal finish body solder.
5. Ability to describe properties of plastic filler.
6. The skills and knowledge to prepare metal surface to be filled with plastic.
7. The ability to apply plastic filler and complete finishing operations.
8. Positive attitude regarding value and dignity of work.
9. Pride and respect of craftsmanship for this occupational field.
10. Safe work habits and proper shop behavior to guard against accidents.
11. An incentive to continue with more advanced training within the occupational field.

SPECIFIC BLOCK OBJECTIVES

BLOCK I - ORIENTATION

The student must be able to:

1. List the opportunities that are available for career in the auto body and refinishing occupational field by oral or written assignment.
2. Demonstrate skills and knowledge which will prepare him for a safe working life by shop practice.
3. State what will be expected of him as an auto body repairman by oral or written test.
4. Demonstrate pride and respect for workmanship by his performance.
5. Demonstrate an understanding of shop organization by written assignment.
6. Demonstrate understanding and acceptance of personal responsibilities by his actions in classroom or laboratory.

BLOCK II - FILLING WITH BODY SOLDER

The student must be able to:

1. Demonstrate an understanding of the composition and properties of body solder by written test.
2. Exhibit the ability to prepare metal surface preparatory for application of body solder by actual shop practice.
3. Exhibit the ability to apply body solder by following oral instructions.
4. Demonstrate an understanding of methods of metal finishing body solder by actual shop practice.

BLOCK III - PLASTIC FILLER

The student must be able to:

1. Demonstrate an understanding of the composition of plastic filler by written assignment.
2. Exhibit the ability to prepare the metal surface preparatory for filling with plastic by following oral instruction.
3. Demonstrate an understanding of shaping and forming metal by shop practice.
4. Exhibit the ability to mix and apply plastic filler by actual performance.
5. Exhibit the ability to sand and finish filled area by actual performance.

BLOCK IV - QUINMESTER POST TEST

The student must be able to:

Satisfactorily complete the quinmester post test.

Course Outline

AUTO BODY REPAIR AND REFINISHING 2
(Automotive Body Fillers)

Department 48 - Course 9035.03

I. ORIENTATION

A. Objectives of Course
   1. Methods of evaluation
   2. Standard
      a. Manipulation
      b. Written test
      c. Oral test
      d. Diagnosis and job performance

B. Student Benefits
   1. Opportunities for employment
      a. Scope of trade
      b. Job opportunities
   2. Qualifications for employment
      a. Attitude
      b. Dependability
      c. Job competency
      d. Experience
      e. Pride of workmanship
      f. Trade certificate
      g. Foundation for more education and training

C. Student Responsibilities
   1. Shop rules and procedures
   2. School policies and expenses
   3. Safety regulations
      a. Care of hand tools
      b. Appropriate dress
      c. Use and care of equipment
      d. Housekeeping
      e. Materials and supplies
      f. Reporting loss of tools
      g. Reporting defective tools
      h. Employee-employer relations
      i. Employee-customer relations

II. FILLING WITH BODY SOLDER

A. Composition of Body Solder
   1. Physical properties
      a. Plasticity
      b. Weight
      c. Tin
      d. Lead

II. FILLING WITH BODY SOLDER (Contd.)

2. Preparation of metal surface
   a. Hand tools
   b. Shaping metal
   c. Power tools
   d. Grinding
   e. Sanding
   f. Filing
   g. Cleaning
   h. Safety and health hazards

B. Application of Body Solder
   1. Use of oxyacetylene torch
      a. Heating
      b. Fluxing
      c. Tinning
      d. Quenching
   2. Metal finish filled area
      a. Grinding
      b. Sanding
      c. Shaping and forming
      d. Safety and health hazards
      e. Filing

III. PLASTIC FILLER

A. Properties of Plastic Fillers
   1. Polyester
   2. Epoxy
      a. Composition of plastic
      b. Bonding qualities
      c. Resin
      d. Filler
      e. Catalyst
      f. Working qualities

B. Metal Preparation
   1. Equipment
      a. Hand tools
      b. Power tools
      c. Plastic spreaders
      d. Mixing board
      e. Putty knife
      f. Safety and health hazards
   2. Methods and procedures
      a. Forming metal
      b. Grinding
      c. Sanding
   3. Application of plastic filler
      a. Mixing
      b. Spreading
      c. Forming
      d. Clean-up

III. PLASTIC FILLER (Contd.)

4. Finishing operations
   a. Cheese grating
   b. Sanding
   c. Forming
   d. Safety and health hazards

IV. QUINMESTER POST TEST

BIBLIOGRAPHY

Basic References:

Frazer, Irving, Bedell Earl L., Spicer, Edward D. Automotive Collision Work. First Ed., 1953. Chicago, Ill: American Technical Society. Total Pages, 355.

Sargent, Robert L. Automotive Sheet Metal Repair. Chilton Book Co. Second Ed. 1970, Total pages, 398.

Supplementary References:

Tobalt, Bill. Auto Body Repairing and Repainting. Homewood, Ill: The Goodheart-Wilcox Co., Inc. 1965. Total Pages, 224.

APPENDIX

QUINMESTER POST-TEST SAMPLE

Quinmester Post Test

Name _____ Date _____ Score _____

The following items are multiple choice. Only one of the choices is correct. Circle the number opposite the item you believe correct.

1. The composition of body lead is lead and tin. Which of the following mixtures is best for body solder?

    1. 20% tin 80% lead
    2. 30% tin 70% lead
    3. 40% tin 60% lead
    4. 50% tin 50% lead

2. 30% tin and 70% lead melts at approximately:

    1. 350° heat
    2. 600° heat
    3. 500° heat
    4. 700° heat

3. 50% tin and 50% lead melts at approximately:

    1. 650° heat
    2. 520° heat
    3. 500° heat
    4. 275° heat

4. Which of the following mixtures of solder has more strength?

    1. 40% tin 60% lead
    2. 50% tin 50% lead
    3. 30% tin 70% lead
    4. 20% tin 80% lead

5. The melting point of lead is:

    1. 700° heat
    2. 500° heat
    3. 620° heat
    4. 450° heat

6. The melting point of tin is:

    1. 650° heat
    2. 500° heat
    3. 350° heat
    4. 455° heat

7. Raw myriatic acid is sometimes used to remove:

   1. weld scale
   2. paint
   3. rust
   4. undercoating material

8. Metal must be thoroughly cleaned before tinning can be done. This is accomplished by using a:

   1. disc grinder
   2. wire brush
   3. sand paper
   4. all of above

9. Tinning acts as a bond between the:

   1. metal and body solder
   2. paint and body solder
   3. weld scale and body solder
   4. rust and body solder

10. Tinning flux is used to:

    1. clean rust from metal
    2. remove rust scale from weld
    3. clean metal so solder will stick
    4. remove paint

11. Wood paddles are used to:

    1. smooth and form molten solder
    2. tin metal surface
    3. scape off excess solder
    4. none of above

12. The purpose of using oil on solder paddles is to:

    1. keep solder from sticking to paddle
    2. make solder spread easier
    3. protect paddle surface
    4. all of above

13. When using the oxyacetylene torch for wiping solder, the best type of flame setting is:

    1. oxidizing flame
    2. carburizing flame
    3. neutral flame
    4. none of above

14. A mush pot can be made from:

1. a frying pan
2. a tin can
3. a hub cap
4. all of above

15. A disc sander is not recommended for sanding solder because the dust:

1. can be inhaled into lungs
2. can be absorbed into skin pores
3. can cause injury to eyes
4. all of above

16. When mixing plastic filler an additive is used to:

1. soften filler
2. harden filler
3. thin filler
4. make filler stick to surface

17. When too much of the additive is used, it causes the filler to:

1. harden too slow
2. harden too fast
3. peel
4. have poor adhesion

18. Plastics filler will adhere best when:

1. applied over paint
2. applied over deeply dusted surface
3. applied over thoroughly sanded surface
4. a coat of primer has been sprayed over surface

19. After using a portion of a can of plastic filler and the portion left is too thick, it may be thinned by using:

1. enamel reducer
2. lacquer thinner
3. mineral spirits
4. polyester resin

20. After a mixture of plastic filler has been used, the mixing board and plastic spreader should be cleaned with:

1. lacquer thinner
2. mineral spirits
3. disc sander
4. soap and water

21. When plastic has been applied and is sufficiently hard, it should be rough finished with:

1. body file
2. cheese grater
3. disc sander
4. orbital sander

22. The most highly recommended sand paper for finishing plastic filler is:

1. #24
2. #80
3. #40
4. #320

23. If high spots appear when sanding plastic filler the best procedure is:

1. Fill surrounding area level with high spots.
2. Sink high spots with pick hammer.
3. Drive them in with large hammer and block of wood.
4. Leave as is.

24. One of the following tools is not used in finishing plastic filler:

1. orbital sander
2. air sander
3. squeege
4. disc sander

25. Before painting area that has been filled with plastic, it must be sprayed with:

1. zinc chromatic primer
2. enamel primer-sealer
3. combination lacquer primer surfacer
4. clear lacquer

ANSWER KEY TO QUINMESTER POST TEST

1. 2
2. 3
3. 2
4. 2
5. 3
6. 4
7. 1
8. 4
9. 1
10. 3
11. 1
12. 4
13. 2
14. 4
15. 4
16. 2
17. 2
18. 3
19. 4
20. 1
21. 2
22. 3
23. 2
24. 3
25. 3